Extron® Electronics

INTERFACING, SWITCHING AND DISTRIBUTION

User's Manual

CVEQ1, CVEQ1 WM, CVEQ1 AAP

1-Input, 1-Output Equalizing Composite Video Line Drivers

68-544-01 **Rev. C**
09 05

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Precautions

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations• Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterias usadas siguiendo las instrucciones del fabricante.

FCC Class A Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:

Extron Electronics
1001 East Ball Road
Anaheim, CA 92805, USA

Asia:
Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

Europe, Africa, and the Middle East:

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

Japan:
Extron Electronics, Japan
Kyodo Building
16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

安全须知 • 中文

这个符号提示用户该设备用户手册中有重要的操作和维护说明。

这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

警告

电源 • 该设备只能使用产品上标明的电源。 设备必须使用有地线的供电系统供电。 第三条线（地线）是安全设施，不能不用或跳过。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

电源线保护 • 妥善布线，避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。 设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。 不要用任何东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。 必须使用与厂家推荐的相同或相近型号的电池。 按照生产厂的建议处理废弃电池。

Quick Start Guide — CVEQ1 Series

CAUTION *Installation and service must be performed by authorized personnel only. The CVEQ1 AAP and CVEQ1 WM must be used with UL approved electrical boxes. See "UL Requirements", page 2-3.*

To install and set up a CVEQ1, follow these steps:

Step 1

Turn the input and output devices off and unplug their power cords.

Step 2

For the CVEQ1, go to step 3.

For the CVEQ1 AAP,

A. Determine the installation location.

B. If applicable, follow the site preparation (hole cutting, electrical box installation, and cable preparation) instructions included with the device or AAP wallplate into which the CVEQ1 AAP will be installed.

C. Attach the CVEQ1 AAP to the Extron device faceplate or AAP wallplate.

For the CVEQ1 WM,

A. Determine the installation location.

B. Prepare the site (cut the hole, install the electrical box, and prepare the cable).

Step 3

Attach output cables to the rear (CVEQ1)/bottom (CVEQ1 AAP)/ side (CVEQ1 WM) panel of the line driver and to the output devices. See "Rear/Bottom/Side Panel Features and Cabling" in chapter 2.

Step 4

Attach input cables to the input devices and to the line driver's front panel connectors. See "Front Panel Features and Cabling" in chapter 2.

Step 5

Connect power cords and turn on the output devices (projector/ monitor, speakers), buffer, and input devices.

Step 6

The picture should appear, and sound should be audible. If not, ensure that all devices are plugged in and receiving power. Check the cabling; make adjustments as needed.

Quick Start Guide — CVEQ1 Series, cont'd

Step 7

While watching the display, adjust the video gain and equalization by using the rotary Gain and Equalize controls. An oscilloscope can be used to achieve a more precise adjustment. See "Top/Side Panel Features and Adjustments" in chapter 2.

Step 8

For the CVEQ1 AAP or CVEQ1 WM,

A. Disconnect the line driver's power supply at the source end (not at the line driver).

B. Disconnect the input and output devices' power.

C. For the CVEQ1 WM, secure the faceplate onto the UL-approved electrical wall box in the wall or furniture.
For the CVEQ1 AAP, secure the wallplate/faceplate that the CVEQ1 AAP is attached to onto the UL-approved electrical wall box in the wall or furniture.

D. Restore power to the line driver and to input and output devices.

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Chapter One

Introduction

About the CVEQ1, CVEQ1 WM, and CVEQ1 AAP

Features

About the CVEQ1, CVEQ1 WM, and CVEQ1 AAP

The Extron CVEQ1 is a one-input, one-output, composite video line driver. It features a 185 MHz (-3 dB) video bandwidth.

It accepts one composite video input on a female BNC connector and one stereo audio input on a pair of female RCA connectors. One female BNC connector provides equalized video output, and a five-pole captive screw connector provides for stereo audio output.

The Extron CVEQ1 AAP is identical to the CVEQ1, except that it is designed to be mounted in a double-space height architectural adapter plate bracket (in a device's faceplate or in an AAP wallplate) for installation into a wall or furniture.

The CVEQ1 WM shares the features of the other two models, but it has a 1-gang faceplate for installation into a UL-approved electrical wall box set into a wall or furniture.

In this manual "CVEQ", "CVEQ1", and "line driver" are used to refer to all models interchangeably unless otherwise noted.

Features

Stereo audio — Unbalanced stereo audio input can be output as balanced or unbalanced stereo audio.

Gain adjustment — All models offer a video gain adjustment with a range of -6 dB to +6 dB.

Equalization adjustment — Each model also features an equalization adjustment that changes the level and peaking of the output signal to compensate for use of long cables. The CVEQ1 series line drivers can drive video signals through up to 1000 feet (300 meters) of Extron RG6 cable.

Chapter Two

Installation, Setup, Operation

UL Requirements

Preparing the Site and Installing the Wall Box

Front Panel Features and Cabling

Rear/Bottom/Side Panel Features and Cabling

Top/Side Panel Features and Adjustments

Mounting the CVEQ1 AAP

Mounting the CVEQ1 WM

UL Requirements

The Underwriters Laboratories (UL) requirements listed below pertain to the installation of the CVEQ1 WM and CVEQ1 AAP.

1. These units are not to be connected to a centralized DC power source or used beyond their rated voltage range.

NOTE *The Extron P/S 100, P/S 150, and other Extron power supplies may be used with the CVEQ.*

2. These units must be installed in UL listed junction boxes.

NOTE *The UL approved electrical wall box (junction box) is not included with the CVEQ; the installer is responsible for obtaining and installing the box.*

3. These units must be installed with conduit in accordance with the National Electrical Code.

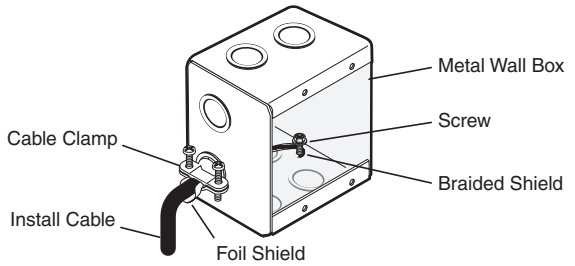
Preparing the Site and Installing the Wall Box

Choose a location that will allow cable runs without interference. Allow enough depth for both the wall box and the cables. You may need to install the cables into the wall, furniture, or conduits before installing the line driver.

- The CVEQ1 AAP can be installed in an Extron two-gang, four-gang, or half rack width AAP Architectural Adapter Plate or in the faceplate of another Extron device that accepts AAP plates, such as an interface or distribution amplifier. Refer to the mounting instructions for the adapter plate or device.
- The CVEQ1 WM can be installed in a standard one-gang electrical wall box that is at least 2.5″ deep. An optional one-gang mounting bracket (mud ring) is also available.

The installation must conform to national and local electrical codes and to the line driver's size requirements. A dimensional drawing of the CVEQ1 WM and a template (not to scale) are provided in appendix B of this manual.

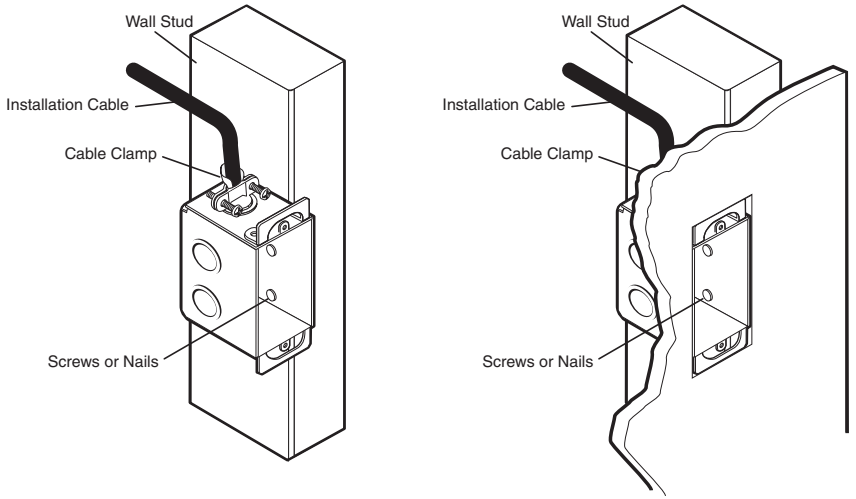
1. Cut out the center portion shown in the template that corresponds to the wall box.
2. Place the template (or the wall box) against the installation surface, and mark the guidelines for the opening on the wall or furniture.
3. Cut out the material from the marked area.
4. Check the opening size by inserting the wall box into the opening. The box and the line driver's circuit boards and connectors should fit easily into the opening. Enlarge or smooth the edges of the opening if needed.
5. Feed cables through the wall box punch-out holes, and secure them with cable clamps to provide strain relief.
6. Exposed cable shields (braids or foil) are potential sources of short circuits. Trim back and/or insulate shields with heat shrink.



Grounding outer braided and foil shields

WARNING *To prevent short circuits, the outer foil shield can be cut back to the point where the cable exits the cable clamp. Both braided and foil shields should be connected to an equipment ground at the other end of the cable.*

7. Insert the wall box into the opening, and attach it to the wall stud or furniture with nails or screws, leaving the front edge flush with the outer wall or furniture surface. See the following illustration, which applies to one-, two-, and four-gang wall boxes.



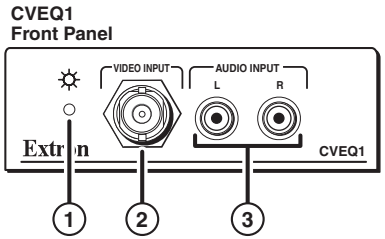
Attaching a wall box to a wall stud

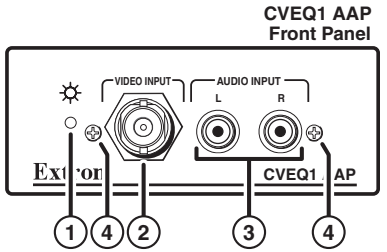
If attaching the wall box to wood, use four #8 or #10 screws or 10-penny nails. A minimum of ½ inch (1.3 cm) of screw threads must penetrate the wood.

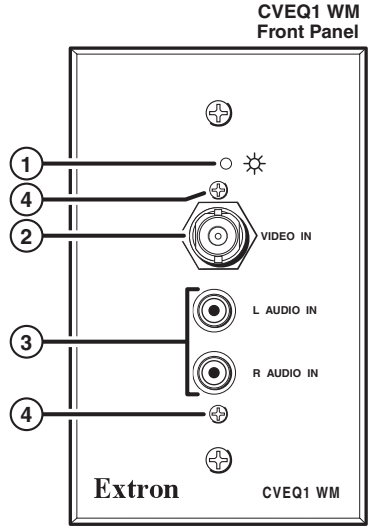
If attaching the wall box to metal studs or furniture, use four #8 or #10 self-tapping sheet metal screws or machine bolts with matching nuts.

8. Set the gain and equalization, and cable and test the line driver before fastening it into the wall box. ***The adjustments and cables will be inaccessible after installation***. See "Top/Side Panel Features and Adjustments" in this chapter for details.

Front Panel Features and Cabling



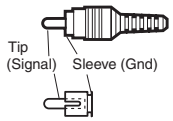




(1) **Power indicator LED** — This LED lights **amber** when the line driver receives power. It lights **green** when the line driver receives power and an active signal.

(2) **Video input connector** — Use a coaxial cable to connect a composite video source to this female BNC connector.

(3) **Audio input connectors** — Connect an audio source using these female RCA-style connectors for left and right unbalanced stereo audio input. The male plugs should be wired as shown at right.



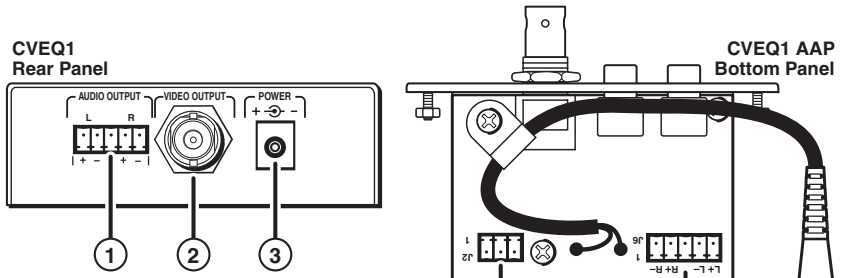
(4) **Faceplate screws** (CVEQ1 WM and CVEQ1 AAP only) — These screws fasten the line driver's faceplate to the rest of the line driver.

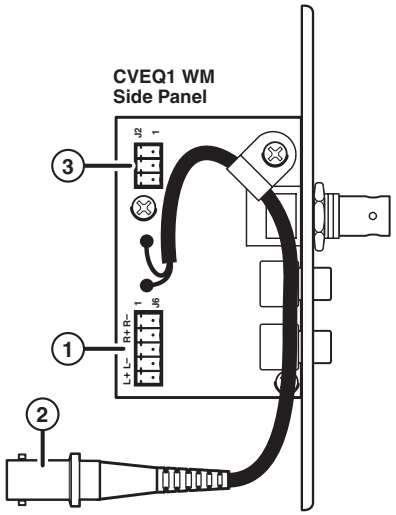
NOTE *Do not remove these faceplate screws while the line driver is attached to the wall/furniture or the detached line driver may fall down into the electrical box.*

To replace the faceplate with a customized faceplate:

1. Set the line driver in an accessible place (do not attempt to replace the faceplate while the line driver is installed in a wall or furniture), and remove the faceplate screws.
2. Remove the hex nut that fastens the video input BNC to the plate.
3. Fasten the new faceplate to the line driver with the faceplate screws.
4. Replace the video input BNC's hex nut and tighten it.

Rear/Bottom/Side Panel Features and Cabling

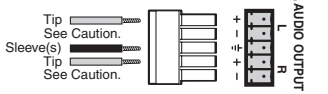




1 **Audio output connector** — Cable an audio device to the line driver via this female 5-pole captive screw connector. Wire the male connector as shown below.

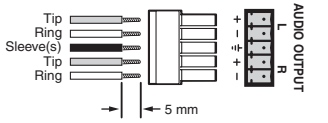
CVEQ1

CVEQ1 Unbalanced Audio Output



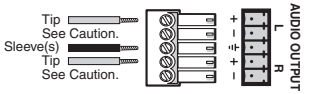
CAUTION **Connect the sleeve to ground (Gnd).** Connecting the sleeve to a negative (–) terminal will damage the audio output circuits.

CVEQ1 Balanced Audio Output



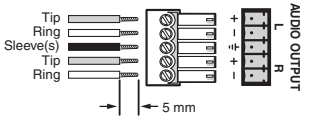
CVEQ1 WM, CVEQ1 AAP

CVEQ1 WM, CVEQ1 AAP Unbalanced Audio Output



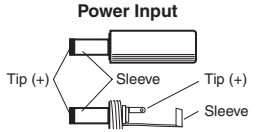
CAUTION **Connect the sleeve to ground (Gnd).** Connecting the sleeve to a negative (–) terminal will damage the audio output circuits.

CVEQ1 WM, CVEQ1 AAP Balanced Audio Output



2 **Video output connector** — Using a coaxial cable, connect a display device to this female BNC connector. For the CVEQ1 WM and CVEQ1 AAP, the BNC is at the end of a short pigtail on the circuit board.

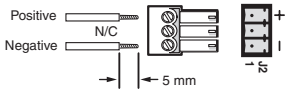
3 **Power supply connection** — On the CVEQ1 the power input connector is a 2-pole jack that can be used to connect a 9 VDC to 24 VDC, 1 A (maximum), external power supply. If you use an unterminated power supply (Extron parts #70-055-01 or #28-071-02, or #60-357-01 or #60-432-01), connect the tip of the jack to the positive (hot) wire, and the sleeve to the negative/ground wire, as shown in the illustration at left.



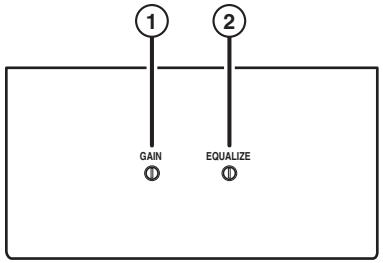
Use a 9 VDC to 24 VDC power supply. A 12 VDC supply is recommended.

The CVEQ1 WM and CVEQ1 AAP have a female captive screw connector instead of a jack for connecting an external power source. Wire the power connection as shown at right.

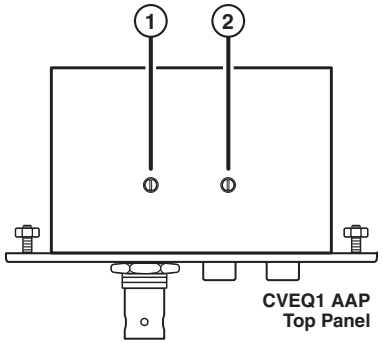
CVEQ1 AAP/CVEQ WM Rear Panel Power Connector



Top/Side Panel Features and Adjustments

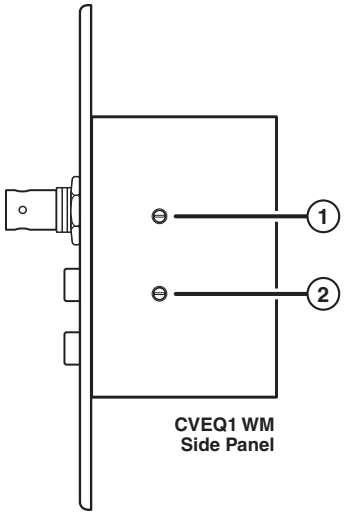


CVEQ1
Top Panel



CVEQ1 AAP
Top Panel

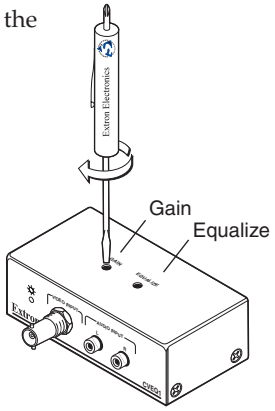
NOTE *Adjust the gain and equalization before installing the CVEQ1 AAP or CVEQ1 WM into a wall or furniture, as the gain and equalization adjustment controls will be inaccessible after installation.*



CVEQ1 WM
Side Panel

(1) **Gain adjustment control** — This control adjusts picture brightness by compensating for signal amplitude loss caused by cable resistance. To adjust the output gain, view the display while using a small, flat-blade screwdriver to rotate this two-turn potentiometer. This control produces a gain adjustment ranging from -6 dB to +6 dB. Select the setting that gives the best picture brightness.

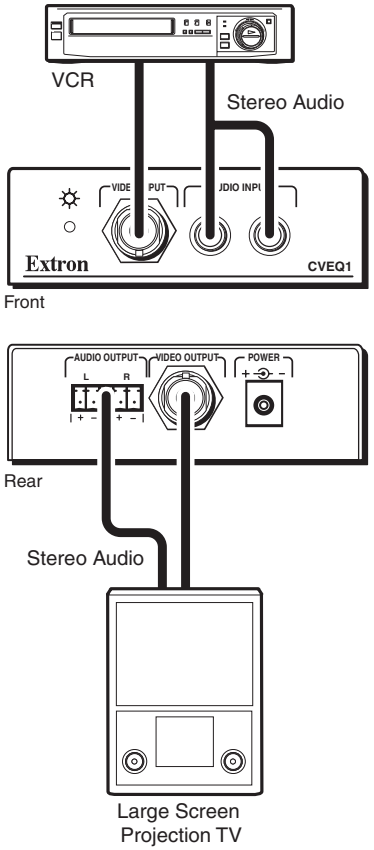
You can judge the adjustment visually by looking at the display. For a more precise setting, you can use an oscilloscope or a waveform monitor connected to the far end of the output cable, and adjust the gain so that the level at the waveform monitor is 100 IRE.



(2) **Equalization adjustment control (Equalize)** — To adjust the output level and peaking to get a sharp picture, rotate this two-turn potentiometer. This adjustment changes the level and peaking of the output signal to compensate for capacitance caused by up to 1000 feet (300 meters) of Extron RG6 cable.

Use a small, flat-blade screwdriver to rotate this control. View the display and select the setting that gives the sharpest picture. For a more precise setting you can use an oscilloscope or a waveform monitor connected to the far end of the output cable, and adjust the equalization so that the color burst ranges between -20 IRE and +20 IRE.

NOTE *The Equalize control is a potentiometer with a soft mechanical stop at the high and the low end. If you have reached the high or low end of the adjustment, the potentiometer makes a clicking sound as you turn it, and no change is apparent on the display.*

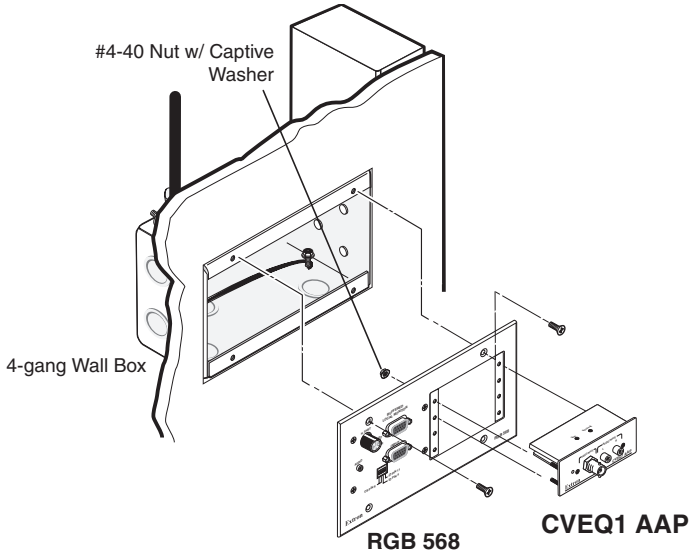


A typical CVEQ1 application

Mounting the CVEQ1 AAP

The CVEQ1 AAP and any other adapter plates must be attached to a device's faceplate or an AAP wallplate and cabled before the device or wallplate is installed in a wall or furniture. The screws needed for installing the CVEQ1 AAP are built into its front panel, so no additional screws are needed.

1. Insert the CVEQ1 AAP's screws through the holes in the faceplate or AAP wallplate. Secure the line driver to the faceplate or wallplate with the provided captive washers and #4-40 nuts.

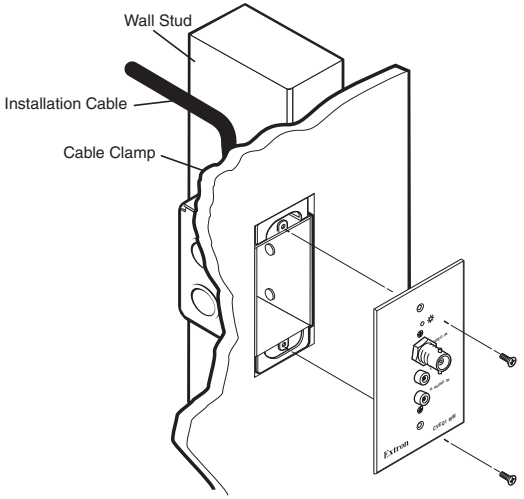


Mounting the CVEQ1 AAP to an interface or wallplate and into a wall box

2. Follow steps 3 through 8 in the Quick Start Guide at the front of this manual.

Mounting the CVEQ1 WM

The CVEQ1 WM must have output cables connected before it is installed in a wall or furniture. Secure the CVEQ1 WM to the wall box as shown below.



Mounting the CVEQ1 WM into a wall box

Appendix A

Specifications, Part Numbers, and Accessories

Specifications

Included Parts

Accessories

Cables

Specifications

Video

Gain	-6 dB to +6 dB, adjustable: 0.5 V to 2.0 V ±10% with input at 1 volt
Equalization/peaking gain	4.5 dB max. @ 8 MHz
Bandwidth	185 MHz (-3 dB)
Differential phase error	1° at 3.58 MHz
Differential gain error	0.07% at 3.58 MHz

Video input

Number/signal type	1 composite video
Connectors	1 female BNC
Nominal level	1 Vp-p
Minimum/maximum levels	Analog: 0.3 V to 2.0 Vp-p with no offset at unity gain
Impedance	75 ohms
Return loss	<-30 dB @ 5 MHz

Video output

Number/signal type	1 equalized composite video
Connectors	1 female BNC
Nominal level	1 Vp-p at unity gain
Minimum/maximum levels	0.3 V to 2.0 Vp-p
Impedance	75 ohms
Return loss	<-30 dB @ 5 MHz
DC offset	±50 mV with input at 0 offset

Sync

Standards	NTSC 3.58, NTSC 4.43, PAL, SECAM

Audio

Gain	Unbalanced output: 0 dB; balanced output: +6 dB
Frequency response	20 Hz to 20 kHz, ±0.5 dB
THD + Noise	0.025% @ 1 kHz, 0.020% @ 20 kHz at nominal level
S/N	>86 dB at output 6 dB, balanced
Stereo channel separation	>75 dB @ 20 Hz to 20 kHz

Audio input

Number/signal type	1 stereo unbalanced
Connectors	2 RCA female
Impedance	>10k ohms unbalanced, DC coupled
Nominal level	-10 dBV (316 mV)
Maximum level	+6 dBV, (unbalanced) at 1% THD+N

NOTE *0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu*

Audio output

Number/signal type	1 stereo, balanced/unbalanced
Connectors	
CVEQ1	(1) 3.5 mm captive screw connector, 5 pole
CVEQ1 AAP	(1) 3.5 mm direct insertion captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Nominal level	-2 dBu (632 mV), balanced output
Maximum level (Hi-Z)	>+16 dBu, balanced at 1% THD+N
Maximum level (600 ohm)	>+9 dBm, balanced at 1% THD+N

General

External power supply	100 VAC to 240 VAC, 50/60 Hz, external, autoswitchable; to 12 VDC, 1 A (max.), regulated
Power input requirements	12 VDC, 0.4 A
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Rack mount	No
Enclosure type	Metal
Enclosure dimensions	
CVEQ1	1.2″ H x 3.5″ W x 1.8″ D 3.0 cm H x 8.9 cm W x 4.6 cm D (Depth excludes connectors.)
CVEQ1 AAP	
Plate	1.4″ H x 3.5″ W x 0.1″ D (2.8 cm H x 8.9 cm W x 0.3 cm D) (double space high AAP plate)
Circuit board	1.1″ H x 2.7″ W x 1.7″ D (2.8 cm H x 6.9 cm W x 4.3 cm D) (Height includes connectors, but not cables.)
CVEQ1 WM	
Plate	4.5″ H x 2.8″ W x 0.1″ D (11.4 cm H x 7.1 cm W x 0.3 cm D) (1 gang)
Circuit board	2.7″ H x 1.1″ W x 1.7″ D (6.9 cm H x 2.8 cm W x 4.3 cm D) (Width includes connectors, but not cables.)
Product weight	
CVEQ1, CVEQ1 AAP	0.2 lbs (0.1 kg)
CVEQ1 WM	0.3 lbs (0.1 kg)
Shipping weight	
CVEQ1, CVEQ1 AAP	2 lbs (1 kg)
CVEQ1 WM	3 lbs (2 kg)
Vibration	ISTA 1A in carton (International Safe Transit Assn.)
Listings	UL, CUL
Compliances	CE, FCC Class A
MTBF	30,000 hours

Warranty ..... 3 years parts and labor

NOTE *All nominal levels are at ±10%.*

NOTE *Specifications are subject to change without notice.*

Included Parts

These items are included in each order for a CVEQ1, CVEQ1 AAP, or CVEQ1 WM:

Included parts	Part number
CVEQ1	60-360-02
or CVEQ1 AAP (gray, black, white)	70-146-02, -12, -22
or CVEQ1 WM (gray, black, white)	60-435-02, -12, -22
12 VDC, 1 A max. external power supply	70-055-01
CVEQ1/CVEQ1 AAP/CVEQ1 WM User's Manual	

Accessories

Accessories	Part number
BNCM-RCAF adapters (10)	100-234-01
3.5 mm 5-pole captive screw connector	10-319-10
AAP 102 2 gang wall plate (gray, black, white)	60-300-01,-02,-03
AAP 104 4 gang wall plate (gray, black, white)	60-301-01,-02,-03
AAP 201 half rack width, 1U high faceplate	60-302-01
AAP 202 half rack width, 2U high faceplate	60-303-01
1-gang mounting bracket/mud ring (gray, black, white)	70-086-05, -15, -25
P/S 100 universal power supply	60-357-01
P/S 150 universal power supply	60-432-01

Cables

Super high resolution cables	Part number
RG6-1, 6′ (1.8 m), 12′ (3.7 m)	26-383-12, -07
RG6-1, 50′ (15.2 m), 100′ (30.5 m)	26-383-05, -03
RG6-1, 500′ (152.4 m) bulk	22-098-02

B

Appendix B

Dimensions and Templates

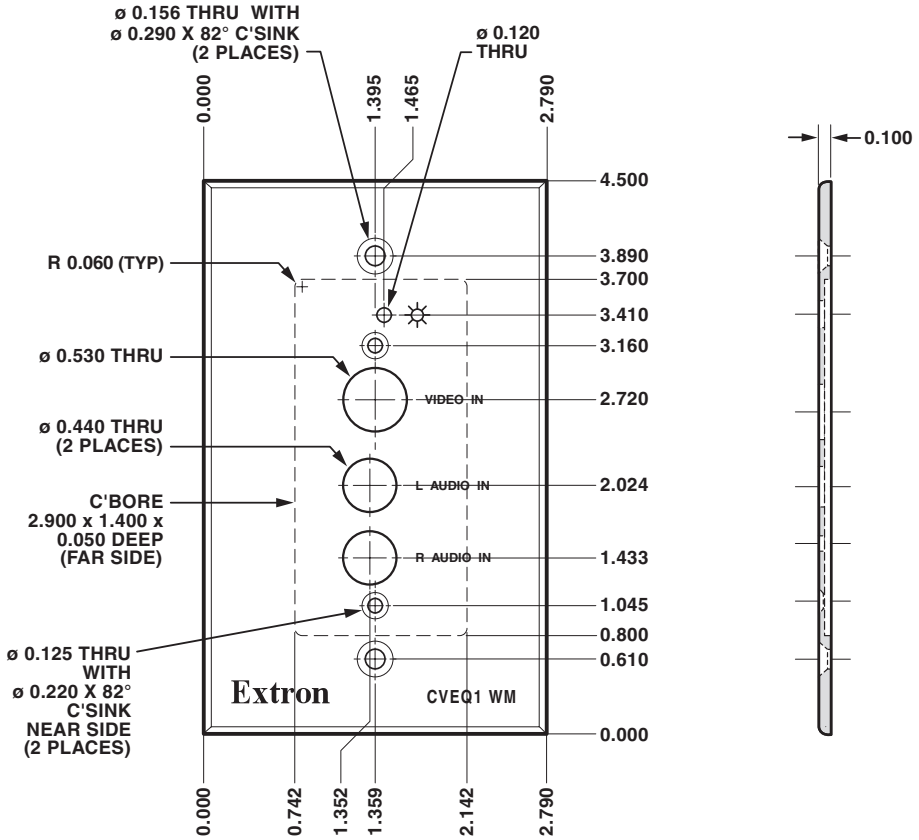
Dimensions

Template

Dimensions and Templates

Dimensions

NOTE *The dimensions drawing is not 100% of the actual size.*

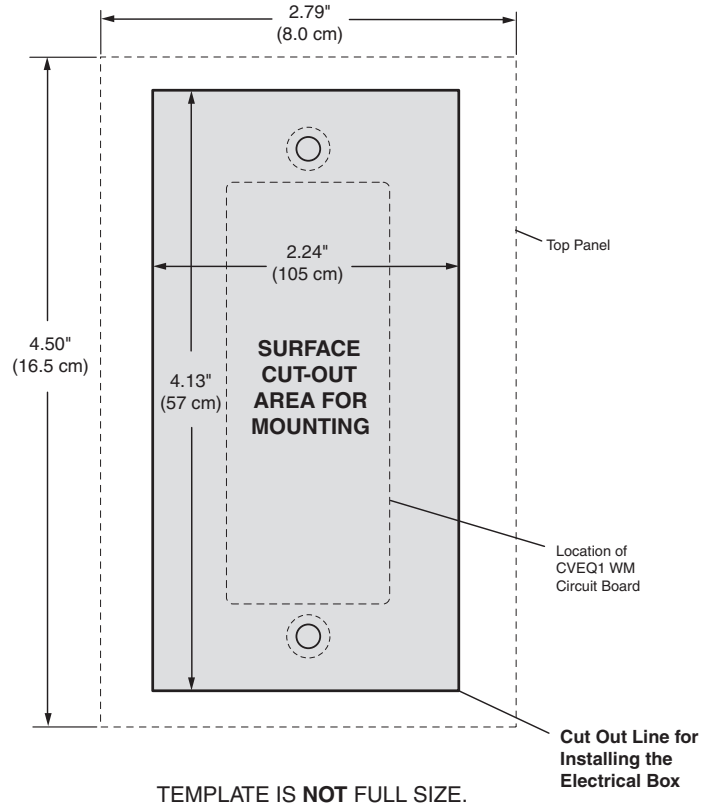


Template

CVEQ1 WM template

Cut-Out Template for the Extron

CVEQ1 WM



TEMPLATE IS **NOT** FULL SIZE.